



Flexible Circuits, Inc.

222 Valley Road, Warrington, Pa. 18976-2580 * Phone (215) 343-2300 * FAX (215) 343-2075

Supplier Quality Requirements

Applicability: This document contains requirements that are applicable when invoked by Flexible Circuits, Inc. Purchase Orders. Requirements include the mandatory use of these codes for Supplier Contract Review and Quality Planning activities. This document is controlled electronically on the Flexible Circuits, Inc website by revision. Supplier shall visit the website www.flexiblecircuits.net for the latest revision of these quality requirements upon receipt of the purchase order.

The Flexible Circuits Inc. Purchase Order is the official binding contract in the order of precedence described in the Terms & Conditions. QR number or specific text specifies requirements on the Purchase Order. If conflicts between flow down documents and the Purchase Order are detected, the Supplier shall immediately notify the Buyer. (Note: the “approved until” line on all purchase orders is null and void as of 2/5/15 and is not to be construed as a determination of supplier approval or acceptance)

Subcontracting Policy: Flexible Circuits, Inc. suppliers shall ensure flow down to, and compliance with, all applicable Purchase Order requirements to their sub-tier suppliers, including approved Special Process providers as applicable. All requirements herein designated by the QR prefix that are directly flowed on subsequent purchase orders are intended to apply to the Seller, and to their direct and sub-tier providers as applicable for the product or service being requested.

Right of Entry: Flexible Circuits, Inc., their customers and Regulatory Authorities reserve the right to perform audits and/or inspections at the Supplier’s and/or supplier’s subcontractor’s facility on the manufactured and/or repaired parts. Supplier material, records, process and routing sheets, manufacturing, and test and inspection facilities are subject to review. When on-site verification of Contract / Purchase order conformance is required, the supplier shall provide the equipment, facilities, and personnel necessary to verify compliance.

Configuration Management: The Supplier shall assure that the current configuration of all drawings, specifications, and instructions required by the Contract / Purchase Order, as well as authorized changes, are used for manufacturing, inspecting, and testing. Current revisions of detail drawings and specifications may be obtained through the Buyer.

Date	Revision	Revision Summary	Approval
7/1/2010	000	Initial release	P. McDowell
11/9/10	001	Add QR014-counterfeit parts prevention	P. McDowell
8/18/11	002	Updated Counterfeit parts plan to include vendor requirement for disclosure of source of parts	P. McDowell
9/14/12	003	Add QR-015 obsolescence clause	P. McDowell
11/11/15	004	Deleted cancelled DFARS clause in QR011; added note in Applicability section of header information	P. McDowell



Flexible Circuits, Inc.

222 Valley Road, Warrington, Pa. 18976-2580 * Phone (215) 343-2300 * FAX (215) 343-2075

1/9/17	005	Incorporated active DFARS into QR011; Added QR011A for Conflict Minerals requirements; Added QR012A for Export Control and ITAR requirements for transfer of data; Deleted reference to customer specific requirements in QR013	P. McDowell
9/1/17	006	QR011A incorporated as an integral part of QR011. QR012A incorporated as an integral part of QR012. Updated Subcontracting Policy to expand flow down requirements to sub tiers.	P. McDowell

QR001 Quality System:

The supplier shall maintain a quality system that meets (as a minimum) the requirements of MIL-I-45208, with a preference to meet ISO9001: 2000 and/or AS9100. Distributors shall maintain a system to ensure the product or services provided meet the requirements of the Purchase Order. Raw material and/or certifications from the manufacturer shall be maintained for a period of no less than 7 years and shall be made available to Flexible Circuits, Inc. upon request.

QR002 Change Approval:

All communication, technical guidance and instructions having contractual impact shall be accomplished directly between the buyer and the supplier's authorized representative. No contract or specification deviations shall be made without the written authorization of the Buyer.

Items furnished under this purchase order shall be identical to product previously accepted by Flexible Circuits, Inc. No changes in materials, processes, procedures, design interfaces or software which might affect the fit, form, function, safety, weight, maintainability, service life, reliability, replaceability, or interchangeability of the supplies to be delivered to Flexible Circuits, Inc. will be made without prior written approval from the Buyer.

Additionally, the Buyer shall be notified prior to any major plant rearrangement, or plant relocation, request for change, or notification of plant movement.

It is the supplier's responsibility to fully comply with all the instructions listed on the Purchase Order. Lack of written approval shall not relieve the supplier of the responsibility to fully comply with all of the requirements of the purchase order. The supplier shall not receive any compensation in any form from the Buyer for unauthorized activity.

Supplier does not have material review authority for materials that do not meet the requirements of the purchase order and must contact the Buyer for approval prior to shipment of goods or services..

QR003 Certificate of Compliance:



Flexible Circuits, Inc.

222 Valley Road, Warrington, Pa. 18976-2580 * Phone (215) 343-2300 * FAX (215) 343-2075

Material supplied on this purchase order shall be accompanied by a C of C, which must include the following information as a minimum:

1. Original manufacturer's and/or distributor's (or Service Provider's) name and address
2. Flexible Circuits, Inc. purchase order number, part number, drawing number, and revision (where applicable)
3. Manufacturer's part number and revision if different than the Flexible Circuits, Inc. part number and revision.
4. Serial number(s) or date code(s) or lot/batch/heat number(s), and quantity (as applicable)
5. Authorized agent's signature, title and date
6. Statement of conformance to all requirements
7. Shelf Life date (if applicable)

The supplier or distributor shall provide a certificate of conformance with each shipment of items delivered to FCI. The certificate shall state that the manufacturer has performed all required inspections and that the delivered items meet all of the requirements stated. If a distributor, OEM certificates of compliance must be maintained on site and available upon request. Upon completion of shipments against the purchase order, the supplier shall also retain the C of C and all relevant supporting data on file for a period of seven years.

QR004 First Article:

An independent First Article Inspection conforming to the requirements of AS9102 is required for items manufactured, assembled and tested to controlled drawings and specifications unless otherwise specified in documentation attached to this Purchase Order. Common commercial (e.g. parts from distributors or catalogs) MIL-spec / DESC parts are exempt from this requirement. Note: AS9100 certification of the Seller's facility or AS9102 specific forms are not required unless otherwise specified.

QR005 Foreign Object Debris/Damage:

The Seller shall establish and maintain an effective Foreign Object Damage (FOD) Prevention Program to reduce FOD using NAS412 as a guideline. The Seller's program shall utilize effective FOD prevention practices. The program shall be proportional to the sensitivity of the design of the product(s) to FOD, as well as, to the FOD generating potential of the manufacturing methods.

QR006 Electrostatic Discharge (ESD)Control:

For electrical and electronic parts, assemblies, and equipment susceptible to damage from Electrostatic Discharge (ESD), the seller is responsible to establish and implement an ESD Control Program compliant with the latest revision of MIL-STD-1686 and/or ANSI 20.20. The seller shall take the necessary precautions to ensure that static susceptible devices are adequately protected from ESD damage during manufacturing, test, inspection, packaging and shipping. Packaging shall be marked with an ESD cautionary note or symbol.

Anti-Static and Static Dissipative packing material (pink-poly formulations must comply with the Contact Corrosivity Testing (to determine the corrosive tendencies of packaging materials when in intimate contact with other materials) in accordance with MIL-STD-3010 Method 3005 (formerly Federal Standard 101, Method 3005). This anti-static and static dissipative packing material may not be used in direct contact with Optics and Polycarbonates.

QR007 No Pure Tin:

Unless otherwise specified, electronic, electrical, electromechanical, and mechanical piece parts and assemblies, including the internal fabrication of hardware, delivered to Flexible Circuits, Inc. under the provisions of this Purchase Order shall not have pure tin finishes. Additionally, any tin-lead (SnPb) plating or solder process/processing shall result in a finish of no less than 3% lead composition.



Flexible Circuits, Inc.

222 Valley Road, Warrington, Pa. 18976-2580 * Phone (215) 343-2300 * FAX (215) 343-2075

Note: This applies to component leads and terminations, carriers, bodies, cages, brackets, housings, mechanical items, hardware (nuts, screws, and bolts), etc. This does not apply to MIL-SPEC Parts or Drawings that allow the use of Tin (Sn) with less than 3% Lead (Pb).

Seller shall provide a Certificate of Conformance (C of C) with each shipment. The C of C shall mean that the Seller or Seller's agent has verified that delivered product meets the above listed composition requirements.

Seller or Seller's agent has contacted the Original Equipment Manufacturer (OEM) and verified that the specific Mfr / Lot Date Code of delivered product meets the specified minimum lead (Pb) requirement if Tin (Sn) is present in the product.

QR007A Plating Verification:

If request by Flexible Circuits, Inc., Seller or Seller's Subcontractor shall verify by actual sample testing (X-ray Fluorescence testing is preferred) or other industry acceptable method that a minimum of 3% lead (Pb) is present in any process that uses tin (Sn), and a certification/report to this effect shall accompany the material provided.

Seller shall be responsible for managing the compliance with this requirement with subcontractors or sub-tier suppliers, and provide evidence of the appropriate flow-down and management of this requirement to the satisfaction of the Buyer or designate. Unless otherwise specified, all exceptions must be authorized in writing by the Buyer.

QR008 Shelf Life Materials

Supplier shall identify each item, package, or container of limited shelf life material with the current date or date of manufacture, storage, temperature, and special handling conditions in addition to the normal identification requirements. No less than 80% of the product's limited life will remain at the time of receipt by the Buyer, unless a lesser period is authorized by Flexible Circuits, Inc.

QR009 Supplier Corrective Actions

All requests for Supplier Correction Action shall be responded to. These notices reflect Quality/Inspection concerns, and responses must properly address "containment actions", "root cause" by means of the five why's, "corrective actions", "verification", and "actions to prevent recurrence" that are instituted at the Supplier's facility. The response must be returned within thirty days. Failure to respond to these requests may jeopardize continuation of business.

QR010 Solderability Compliance (J-STD)

Materials furnished under this purchase order must meet the requirements for solderability, processing, and/or compliance to J-STD-001, J-STD-002, and/or J-STD-006 as applicable.

QR011

DFARS Requirement (Specialty Metals)

This purchase order incorporates Flexible Circuits, Inc.'s General Terms and Conditions of Purchase, which impose requirements with which you must comply when filling this purchase order. Also, this purchase order incorporates either the contract clause at:

DFARS 252.225-7008 **Restriction on Acquisition of Specialty Metals**

DFARS 252.225-7009 **Restriction on Acquisition of Certain Articles Containing Specialty Metals**

DFARS 252.225-7010 **Commercial Derivative Military Article—Specialty Metals Compliance Certificate**

whichever is applicable. You must flow down the applicable clause above, to all of your vendors that supply any articles delivered under this purchase order that include specialty metals. All such clauses provide the same definition of specialty metals and prohibit Flexible Circuits and all of its suppliers at every tier from incorporating specialty



Flexible Circuits, Inc.

222 Valley Road, Warrington, Pa. 18976-2580 * Phone (215) 343-2300 * FAX (215) 343-2075
metals into military parts, components and/or end item deliverables unless the specialty metals have been smelted (the Deviation clauses add “or produced”) in the United States, its outlying areas, or a qualifying country listed in DFARS 225.872-1.

Exemptions to requirements of the above clauses may exist, as outlined in the clauses themselves or by operation of applicable Department of Defense Domestic Non-Availability Determinations (DNADs) posted on its public web site for that purpose. If you believe an exemption(s) apply, please specify the specifics and provide FCI with documents and information sufficient to demonstrate your entitlement thereto.

Conflict Minerals Compliance

Under Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, publicly traded companies are required to report annually on the use of conflict minerals in their products. In order to provide this information to the SEC, companies must survey their entire supply chain and create a Conflict Minerals Report. While copies of this report are not required to be provided with shipments to Flexible Circuits, Inc. under the provisions of this quality clause, it must be made available upon request if applicable to the product being procured.

QR012

DPAS Rating

This is a rated order certified for National Defense use. Seller is required to follow all the provisions of the Defense Priorities and Allocation System (15 CFR 700). A written or electronic acceptance or rejection of this order with (10 for DX, 15 for DO) workdays after receipt of the order is required. If this order rejected, a reason in writing must be given for the rejection.

Export Data Control and ITAR Requirements

The technical data forwarded herein is export controlled. Export of this information in any form is restricted by the arms export control act (TITLE 22, U.S.C., SEC 2751 ET SEQ.) or the Export Administration Act of 1979, as amended seq. Violations of these export laws are subject to severe criminal penalties. Subcontractor shall not disclose this information or any element thereof, in any form to a foreign person (including foreign person employees), entity, or export it from the United States without U.S. Government authority and the expressed written consent of Flexible Circuits, Inc. Further, by acceptance of this data, subcontractor agrees to treat this information in confidence and will not use it, or disclose to others in whole or in part for any purpose except as authorized in writing by Flexible Circuits, Inc. (inclusive of all copies made by the subcontractor), or certify in writing to Flexible Circuits, Inc. that the data has been destroyed. If subcontractor determines that disclosure of this information to foreign persons, in whole or in part, is necessary for the performance of the work delineated herein, subcontractor shall ensure that such disclosure is in accordance with applicable international traffic in arms regulations (ITAR). Additionally, subcontractor shall provide Flexible Circuits, Inc. advanced notification of such disclosure which will include applicable information required for duty free entry in accordance with the applicable FAR/DFAR clauses. Subcontractor shall flow down the substance of this notice to all lower tier suppliers where technical information is provided.

QR013 Special Flow Down Requirement

Deleted

QR014 Counterfeit Parts Prevention Control Plan



Flexible Circuits, Inc.

222 Valley Road, Warrington, Pa. 18976-2580 * Phone (215) 343-2300 * FAX (215) 343-2075

The Seller is not authorized to deliver any item procured from sources other than OEMs or OCMs, or their Authorized Distributors without prior written authorization from the Buyer. Seller shall flow down to, and ensure compliance with the requirements of this Q-Note by, lower tier suppliers providing items for delivery to Flexible Circuits, Inc. under this order. Further, the supplier must disclose the source of any part if said part should become the subject of legal or counterfeit issue.

QR015 Obsolescence/End of Life Clause

The Seller shall provide any known obsolescence or end of life information pertaining to the line items on the Flexible Circuits, Inc. purchase orders when such information is known to the Seller and upon receipt and review of the Flexible Circuits, Inc. purchase order. This would include but not limited to a) any component no longer in production, b) any components that will be discontinued in the next 12 months minimum and/or up to 4 years. The Seller shall also provide, when applicable, options and recommendations for the obsolete item.